

August; lower down still the rains apparently begin in September, but, as before noticed, towards the coast they are later, and so do not begin at the mouth of the river till well on in September, after the river has begun to rise. The dry season in the country west of Ulenge also agrees well with the movements of the Congo river, for Dr. Livingstone remarks that the floods in the country between Moero and Ulenge last till May or June, and the lowest state of the Congo was observed to occur in July and August.

With the Kassabi and Chambeze for its head streams, the Congo has a sufficient, though not too great area of drainage to collect the vast quantity of water which it returns to the ocean. On this supposition the area of its basin measures about 800,000 square miles, and that of the Nile nearly 1,300,000 square miles; so that the great African rivers stand in order thus:—Nile, Congo, Niger, and Zambezi.

KEITH JOHNSTON, JUN.

NOTES

WE are informed that the Duke of Devonshire will probably be the President of the Royal Commission to inquire into the Present State of Science in this country.

THERE is so little evidence of scientific training or thought in most things which are done in high places, that it is almost pleasant to be taxed even by a Chancellor of the Exchequer who attempts to do it on scientific principles, or at all events quotes scientific authority as Mr. Lowe does, who, referring to the results of the recent Deep-Sea Dredging Expedition in his Budget speech, compared the British taxpayer to the frail animals which enjoy life at the bottom of the Atlantic at a pressure of three tons to the square inch. We strongly advise Mr. Lowe to sanction another dredging expedition during the present autumn, not that it may be shown how much more vitality there is at a reduced pressure—a vitality more approaching that of "My Lords"—but that even greater pressures may be found and quoted as precedents should the next Budget prove a less satisfactory one. There is a point in the Budget, moreover, of the greatest importance to men of science. The postage on printed matter not exceeding 2 oz., and on newspapers not exceeding 6 oz., is to be reduced to one halfpenny. We have waited a long time for this change: not too long, however, to welcome it warmly now it has come, for the tax on all authors of the postage of scientific papers, copies of which they wish to distribute, has been very great.

THE following are the lecture arrangements at the Royal Institution after Easter:—Four lectures by Prof. Blackie on the Principles of Moral and Political Philosophy, on Tuesdays, April 26th to May 17th. Seven lectures by Prof. Tyndall (subject not announced), on Thursdays, April 28th to June 9th. Seven lectures by Prof. Robert Grant, on Comets, on Saturdays, April 30th to June 11th. Three lectures by Prof. Seeley on History, on Tuesdays, May 24th to June 7th. The *probable* arrangements for the Friday evening meetings are as follows, viz.: April 29th, Prof. Blackie—The Interpretation of Popular Myths. May 6th, Mr. R. A. Proctor—Star Grouping, Star Drifts, Star Mist. May 13th, Rev. Canon Moseley—The cause of the Descent of Glaciers. May 20th, Prof. Williamson—On Atoms. May 27th, Principal Dawson—The Primitive Vegetation of the Earth. June 3rd, Prof. Max Müller—The Migration of Fables. June 10th, Prof. Odling (subject not fixed).

THE *Pall Mall Gazette*, which gives so much space to all matters of scientific or general interest, quoting from the St. John's (New Brunswick) *Telegraph* of the 18th of March, describes an extraordinary phenomenon which took place in the harbour of that city on the previous day. Early in the morning, just before the commencement of a snowstorm, while the wind was rising so as

to be heard within doors, a strange noise, similar to that accompanying the earthquake on the 22nd of October last, was heard by the residents near the harbour. It was then seen that the old ferry, which should be several feet above water, had vanished. A piece about twenty feet by seventy broke off and settled squarely down into the water. A frontage several hundred feet in extent, running from the line of the demolished wharf towards the breakwater, had also gone down, leaving a steep embankment. The soundings since made show that where the old ballast or reefer was the day before, rising above the water eight feet, were found six fathoms of water, the bottom had settled just thirty-two feet. Near where the portion of the wharf settled away, or where a moderately sized vessel used to ground at low water, there is now between six and seven fathoms at low tide. One of Messrs. Adams's buoys, moored about four or five hundred feet from the shore, had disappeared; and last evening, when the tide was at its lowest level, the current was just showing a ripple over the top of it. As the tides rise and fall about thirty feet in St. John's harbour, and the chain of this buoy had several fathoms of scope, it may be inferred that the bottom sank as much as nine or ten fathoms at this point. So far as could be ascertained, the *Telegraph* states this subsidence took place over an area of about three acres in extent.

MR. ARCHIBALD GEIKIE, F.R.S., the director of the Geological Survey of Scotland, is now at the Lipari Islands, his object being to study the volcanic phenomena of those Islands, and of some adjacent parts of Italy. He anticipates that the numerous coast sections of these islands will furnish evidence from which light may be thrown on the history of the volcanic rocks of the British Islands; the manner in which different volcanic rocks yield to the forces of denudation, subaerial and marine, is also a matter of importance that will be carefully studied.

ON Monday evening a distribution of prizes (certificates of merit) took place at the South London Working Men's College, Professor Huxley being in the chair. Previous to the distribution a lecture on the "Biography of a Plant" was given by Mr. Harland Coultas. Professor Huxley, in the course of his remarks, said that they had presented to them an analogy between vegetable and human life, and that analogy he would carry a little further, by reminding them that there was nothing more poisonous or dangerous than an uncultivated mind. He hoped that these educational establishments would do for society what the plant does for the air; namely, absorb all the poison of ignorance, and, by a similar change to that exercised in the chemical action of the plant, give off those benefits which education alone could diffuse.

IT is not often that the daily newspaper press invades a college in search of an editor, and still less often is a learned scientific professor the elect one. We have a case in point, however, of such a condition of things. Professor Jack, M.A., who has for several years held the chair of Natural Philosophy in Owens College, Manchester, has been requested, and has consented, to take the editorial management of one of the oldest and most successful papers north of the Tweed, the *Glasgow Daily Herald*, a paper which frequently discusses scientific subjects with a fulness of knowledge. Mr. Jack has not hitherto been in the toils of daily newspaper life, but he ought to have no mean qualifications for his new vocation, considering the literary and scientific culture and worldly experience which he has acquired as an alumnus of Glasgow College and of St. Peter's College, Oxford; as one of Her Majesty's Inspectors of Schools in the West of Scotland, and as a scientific professor in Cottonopolis.

THE wave of low temperature which passed over the South of England during the latter half of March, was a very remarkable one. From the 22nd of March till the 6th of April the thermometer fell below the freezing point every night, with

scarcely any intermission. For the week ending April 2nd the mean temperature at Blackheath was 37.2° , or about 8° below the average of the corresponding week in the last fifty years. From the reports for sixteen different stations in England, eight in Scotland, and one in Ireland, forwarded every week by Mr. Glaisher to the *Gardener's Chronicle*, it appears that the temperature was much lower in the South than in the North of England, or in Scotland. The lowest averages are given at Portsmouth and London (Blackheath); the highest for England at Liverpool, Salford, and Newcastle; while these latter are several degrees lower than the lowest mean in Scotland. The average temperature for that week in London was 7° lower than in Edinburgh, and 11° lower than in Dublin.

MR. SYMONS'S "British Rainfall for 1869" contains an enormous mass of information respecting the distribution of the rainfall throughout the kingdom during last year, with other meteorological statistics. The extremes of rainfall during the year at the places of observation in England were 198.19 in. at the Sty, in Cumberland, and 20.09 in. at North Sunderland, while many places in the south-east of Scotland enjoy even a dryer climate, the fall at East Linton, Haddington, being only 15.77 in. So much injury is done to science by the publication of statistics based on incorrect data, that Mr. Symons's "Rules for Rainfall Observers" should be in the hands of everyone who possesses a rain-gauge.

M. BOURLLOT, Professor of Mathematics in the Lyceum at Colmar, believes he has established the fact, contrary to the opinion of Arago, that during the Middle Ages the climate of Alsace was milder than at present. He traces a relation of chronological coincidence, if not of cause and effect, between the change of climate and the precession of the equinoxes.

THE honour of knighthood has been conferred on Mr. Ronalds for his early researches in telegraphy.

THE execution of the Faraday memorial has been committed to the well-known sculptor, Mr. Foley.

PROF. TYNDALL'S most recent contribution to the "germ-theory" is contained in a letter to the *Times* of the 7th instant. He has observed that the air breathed out of the lungs, especially at the close of a long voluntary exhalation, is "visibly pure," or produces, when passed across a strong beam of light, the familiar black smoke-like clouds caused by the entire absence of organic matter. He confirms the explanation given by many medical men, and especially by Prof. J. Lister, of Edinburgh, for the exclusion of air from fresh wounds, that the putrefaction of wounds is caused by the germination of the germs of organic life contained, under ordinary circumstances, in large numbers in the air. In a reply to this letter in the *Times* of yesterday, Dr. H. C. Bastian makes the startling assertion that, in conjunction with Dr. Frankland, he has met with living organisms in hermetically-sealed vessels, from which all air had been removed, and after the contained fluids had been raised to a very high temperature. Some solutions containing organic matter and other ingredients were prepared in the following manner:—After a perfect vacuum, above the level of the fluid, had been procured in the glass vessels by means of Sprengel's air-pump, the drawn-out necks of the flasks were closed by means of the blow-pipe flame. The airless flasks, containing then the fluid itself as the only possible germ-containing material, were submitted, in a suitable apparatus, by Professor Frankland, to a temperature varying from 148° C. to 152° C. for four hours, and yet, after having been placed under the influence of suitable conditions, in the course of a few weeks, living organisms—many of them altogether new and strange—were found in these fluids. These extremely important results are about to be communicated to the Royal Society.

THE *Soirée* of the Royal Microscopical Society to be held at King's College on the 20th inst., seems likely to be supplied with a large number of objects of interest. Mr. Charles Stewart prints a descriptive catalogue of 100 microscopic objects selected to illustrate the Invertebrate sub-kingdom, to be exhibited on that occasion.

IN an article in the *Artisan*, for April, on the Influence of the Suez Canal on Trade with India, Sir Frederick Arrow states that at the present moment the influence of the Canal is being felt in a decrease of the cost of fuel east of the Isthmus, which will certainly have a great effect on the cost of carriage, and therefore on the cost of laying down produce and goods. The existence of the route, he believes, will stimulate production, not only in India, but in the various countries which it brings into the family of commercial relations.

ON the 12th of March, the *Hongli*, one of the largest of the packet-boats belonging to the Messageries Impériales, of 2,000 tons burden and 500-horse power, entered the quarantine port of Fricoul direct from the China seas, having traversed the Suez Canal without encountering the slightest obstacle. The cargo consisted of 1,300 bales of silk, 300 chests of tea, and other valuable freight, and there were in addition seventy passengers.

WE learn from Mr. Worthington G. Smith, in reference to a recent report of the proceedings of the Woolhope Naturalists' Field Club, that he has in preparation a *Clavis Agaricinorum*, which will be an analytical key to the genera and sub-genera of the British *Agaricini*; designed to give an immediate clue to their proper generic and sub-generic position, and thus assist in their ultimate determination.

MR. BENTLEY announces for early publication, "Travels in the Air," by Mr. Glaisher and others, with numerous full-paged coloured lithographs and woodcuts.

A NEW work is preparing for publication by Arthur Scott Donkin, M.D., Lecturer on Forensic Medicine to the University of Durham, &c., being a history of the British Diatomaceæ, with plates illustrative of each species.

THE *New York Technologist*, a new magazine especially devoted to engineering, manufacturing, and building, published in New York, describes a new contrivance for preventing people looking into a room, while light is not excluded. It consists of a number of glass rods arranged either vertically or horizontally, and secured together by appropriate frames, forming a series of cylindrical lenses which break up the light and throw it into every part of the room; thus producing a soft and diffused glow which is very beautiful and pleasant. The glass rods may be of any colour, and by an arrangement of the colours very beautiful effects can be produced. The contrivance is the invention of Mr. Demuth.

THE Pharmaceutical Society offers a silver medal for the best Herbarium collected in any part of the United Kingdom between the 1st of May, 1870, and the 1st of June, 1871, to any associate, registered apprentice, or student of the society, not over thirty-one years of age.

THE *Photographic Art Journal*, No. 2, is a very good number. It contains four excellent illustrations: "The Stirrup Cup," from a painting by Verschur, exquisitely soft in tone, done by the Woodbury process; "Netley Abbey," by Mr. Edwards's new process of printing in printing-ink in a common printing press, which seems to give exceedingly good results; "The Muleteer's Love," an example of Mr. Frunwirth's phototype process, also pulled in a common printing press, from an electrotyped surface-block which was reduced from a woodcut by the sole action of light and chemical agents; and "A Village Street in Switzerland," apparently an ordinary silver-print. The comparison of these photographs certainly gives the palm to the new processes, both as to distinctness and softness of tone.